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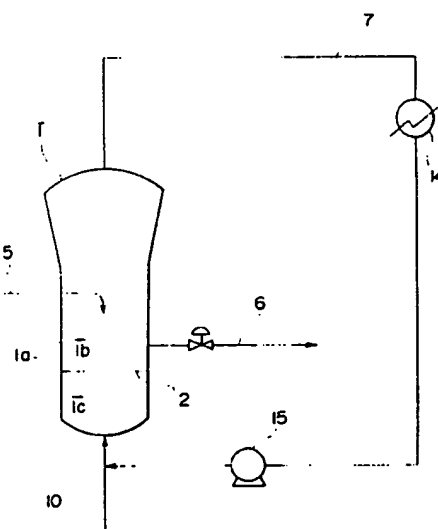
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(54) Gas distributor plate for a gas phase polymerisation apparatus

(57) A gas distributor plate provided in a fluidized bed polymerization vessel which effects the gas phase polymerization of olefins, the gas distributor plate exhibiting excellent action for uniformly diffusing the gas flow in the fluidized bed zone. A gas distributor plate has a number of gas passage holes and is provided in a fluidized bed polymerization vessel which effects the gas phase polymerization of olefins, wherein when the inner radius of the straight drum portion of the polymerization vessel is denoted by 1, the holes perforated in the outer peripheral portion of the distributor plate at 0.7 to 1.0 from the center of the straight drum portion have an average diameter which is larger than the average diameter of the holes perforated in the inner peripheral portion of the distributor plate at smaller than 0.7 from said center. This makes it possible to uniformly and stably diffuse the gas flow in the fluidized bed zone in the polymerization vessel, to effectively prevent the formation of a dead zone, as well as to effectively prevent the polymer from adhering onto the wall surfaces of the polymerization vessel.

FIG. 1



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EUROPEAN SEARCH REPORT

Application Number
EP 95 30 9329

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	FR-A-2 274 345 (CENTRO SPERIMENT METALLURG) * claims; fig.1 *	1	B01J8/44
X	US-A-2 602 647 (R.W. MILLER) * claims; figures 2 and 5 *	1	
A	US-A-5 161 315 (LONG DAVID H) * claims; fig. 6, 7 and 10 *	5-8	
X	* claims; fig. 6, 7 and 10 *	16,17	
A	BE-A-683 994 (R. PYZEL) * fig. 3 *	16,17	
X	EP-A-0 088 404 (MITSUI PETROCHEMICAL IND) * fig. 5-b to fig. 5-f *	18	
A	BE-A-659 783 (SOCIETE BIRTLEY) * fig. 3 *	18	
A	GB-A-2 271 727 (SUMITOMO CHEMICAL CO) 27 April 1994 * claims; fig. 2, 3 and 6 *	8-15, 18-20	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 10 September 1996	Examiner Mergoni, M
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims

- ☐ All claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and those claims for which fees have been
namely claims:
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of the unity of the invention and relates to several inventions or groups of inventions, namely:

see sheet B

- ☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims
- ☐ Only part of the further claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respects of which search fees have been paid.
namely claims:
- ☐ None of the further claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims.
namely claims:



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LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claim 1 and dependent claims 2-15:

A gas distributor plate having a number of gas passage holes, wherein the holes in the outer peripheral portion of the plate have an average diameter which is larger than that of the holes in the inner peripheral portion of the plate.

2. Claim 16 and dependent claim 17:

A gas distributor plate characterised by the cross-sectional shape of the holes.

3. Claims 18 and 20 and dependent claim 19:

A gas distributor plate characterised by having overcaps of a particular design provided to the holes